

REMARKS

Claims 1-64 are pending. Favorable reconsideration is respectfully requested.

The Office Action did not include an initialed copy of the SB/08 form that was filed with the Information Disclosure Statement filed March 4, 2005. Moreover, the Office Action Summary did not check the boxes to acknowledge receipt of the certified copies of the priority documents in the International Stage of the application. It is once again requested that the initialed papers be returned with the next Office Action and the appropriate boxes be checked on the next Office Action Summary.

Claims, 1, 2, 21, 41, 42 and 61-64 were rejected under 35 U.S.C. § 103(a) over U.S. Patent Publication No. 2008/205308 (Prehofer et al.) in view of U.S. Patent 5,594,490 (Dawson et al.). Claims 3, 23 and 43 were rejected under 35 U.S.C. § 103(a) over Prehofer et al. and Dawson et al. and further in view of Sreejith et al. (US 2003/0202511). Claims 4, 5, 10-13, 20, 24, 25, 30-33, 44, 45, 50-53 and 60 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Prehofer et al., Dawson et al. and Sreejith et al., and further in view of Herring (US 2005/0078559). Claims 8, 9, 28, 29, 48 and 49 were rejected under 35 U.S.C. § 103(a) over Prehofer et al., and Dawson et al., and further in view of Herring. Claims 14, 15, 34, 35, 54 and 55 were rejected under 35 U.S.C. § 103(a) over Prehofer et al., Dawson et al., Herring view of Ogier et al. (US 2003/0179742). Claims 16, 36 and 56 were rejected under 35 U.S.C. § 103(a) over Prehofer et al., Dawson et al., Herring and Sreejith et al., and further in view of Schuster et al. (US 6,512,761). Claims 17, 37 and 57 were rejected under 35 U.S.C. § 103(a) over Prehofer et al., Dawson et al., Herring and Sreejith et al., and further in view of Gorsuch (US 7,024,222). Claims 18, 19, 38, 39, 58 and 59 were rejected under 35 U.S.C. § 103(a) over Prehofer et al., Dawson et al., Herring and Sreejith et al., and further in view of Poppe et al (US 2004/0151115).

Applicants traverse and submit that the independent claims are patentable over the cited references for at least the following reasons.

Claim 1 recites, inter alia, that a transmitting node provides a first group flow having one flow or more based upon a first criterion relating to a sequencing and a second group flow having one flow or more based upon a second criterion relating to a retransmitting control. A first identifier is assigned to each flow belonging to the first group flow group, the first identifier being unique, and a second identifier is assigned to each flow belonging to the second group flow, the second identifier being unique. The transmitting node also classifies the packets, which were input, into one flow or more belonging to the first group flow, based upon the first criterion, and also classifies them into one flow or more belonging to the second group flow, based upon the second criterion, affixes to the packets the first identifier, a first sequential number, the first sequential number being unique within flows specified by the first identifier, the second identifier, a second sequential number, the second sequential number being unique within flows specified by the second identifier, and transmit them.

As a result of the claimed method, a sequential number unique to the transmission control and a sequential number unique to sequencing control are affixed to each packet.

As was discussed in the Office Action, Prehofer shows a configuration of the TCP tunnel in which a plurality of sequential numbers are resultantly affixed. However, Prehofer does not teach the configuration in which the flow of retransmission control and the flow of sequencing control are regarded as separate, respectively, such that a sequential number unique within both flows is affixed to each packet, as in claim 1.

In both Prehofer and Dawson, the sequential number, which is affixed with regard to the sequencing control, is a TCP sequential number. In the explanation of the configuration of Fig. 17 and the paragraphs 163 to 166 of Prehofer pointed out in the Office Action, it is clearly mentioned that the first (external) tunnel TUN1 is regarded as the IP tunnel, while the second tunnel TUN2 is regarded as the TCP tunnel, and the sequential number that can be used for the sequencing control and retransmission control, out of the sequential numbers, exists only in the TCP tunnel.

In contrast, in independent claim 1, retransmission control and sequencing control, which are carried out within the identical tunnel by employing TCP, are carried out with a separate flow, respectively. Thus, the noteworthy feature of claim 1 cannot be derived from a reference that premises the use of TCP in which the employment of the identical sequential number for both of retransmission control and sequencing control is specified.

For at least the foregoing reasons, claim 1 is believed clearly patentable over Prehofer and Dawson, taken individually or in any combination. The other independent claims recite a substantially similar feature and are believed patentable for substantially the same reasons.

It is also noted that, due to the recited configuration, the invention defined by the independent claims has a different effect from that of the cited reference. In particular, generally speaking, it is effective to carry out loss detection for each IP path unit in a transfer system for distributing the load to a plurality of the IP paths. This is because a large number of the IP nodes perform a FIFO (First-in-First-out) operation, and thus, sequential reversal hardly ever occurs. However, when sequencing control needs to be taken for each flow unit of L4, and the flows are distributed to a plurality of the paths, and are sent, the sequential reversal cannot be detected in the monitoring that is carried out for each path unit. In such a case, an L4 protocol such as the conventional TCP is used, and the sequential number of the sequencing control, which is carried out for each user flow, is also used for detecting the loss in addition to the original use. Employing the invention defined in independent claim 1 enables a delay in the loss detection to be smaller as compared with the conventional example by carrying out the loss detection for each IP path. The reason is that the claimed invention takes into consideration the fact that, in the link for distributing the load, the flow, being a target of the sequencing control, and the flow of the flow unit with which the loss can be easily detected, differ from one another.

The dependent claims are believed patentable for at least the same reasons as their respective base claims.

In view of the above amendments and remarks, applicants believe the pending application is in condition for allowance.

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Respectfully submitted,

By Joseph W. Ragusa
Joseph W. Ragusa
Registration No.: 38,586
DICKSTEIN SHAPIRO LLP
1633 Broadway
New York, New York 10019-6708
(212) 277-6500
Attorney for Applicant